Design of Small Haul Truck for Fish Transport and Release

Investigators

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Summary

During the past few years the Tracy Fish Collection Facility (TFCF) staff has recognized the need for a smaller haul truck to increase operational flexibility and increase fish transport efficiency. Many times of the year it would be beneficial for the facility to have a haul truck that will allow salvage release offshore at random sites such as boat ramps, shoreline roads and levies, as well as at established release sites. The existing large haul trucks cannot safely access release sites other than the established sites. Several months out of the year small numbers of fish enter the facility. During these times of low salvage numbers it would also be very beneficial to both the TFCF and local communities to use a smaller haul truck to transport salvaged fish. A smaller haul truck would be less expensive to operate and maintain, safer driving through congested areas and impact roadways and local communities far less.

Problem Statement

Greater operational flexibility for transporting salvaged fish to release locations other than established sites and increased fish transport efficiency is needed at the TFCF. The large release trucks cannot safely release fish at any locations other than the established sites which limits flexibility of biologist to adjust release locations to benefit salvage. A smaller haul tank will allow fish to be released at non-standard release sites such as boat ramps and near river roads. Also, several months out of the year fish salvage numbers do not require the capacity of a large haul truck. Frequent driving of the large haul trucks through neighboring towns has become a concern for local residents and communities. Transporting salvaged fish to the release sites during months of low salvage using a smaller haul truck may help resolve these issues with the community and reduce transport costs.

This project will identify the requirements of a small haul tank, investigate commercially available aquaculture transport tanks and/or provide a preliminary design of a tank to meet the needs of the TFCF. The TFCF staff has proposed the project develop a portable tank system that can be carried on a F-450 truck that belongs to TFCF. The need for and type of air supply, cooling, and discharge requirements will be

investigated to allow the truck to discharge both at existing release sites and at selected near shore sites.

Goals and Hypotheses

Goals:

1. Develop a new smaller haul tank for transporting salvaged fish that will fit on the existing F-450 truck and be compatible with existing fish release sites, as well as offshore locations (boat ramp, side of road, etc.)

Hypotheses:

1. A haul tank that is capable of fitting on the existing F-450 truck and is compatible with existing fish release sites and off shore releases would benefit TFCF fish salvage efficiency.

Materials and Methods

The development of the fish haul tank will start by determining the loading capacities of the existing F-450 pickup, the maximum size of the haul tank, and identify auxiliary features required to meet the needs of transporting salvaged fish from the TFCF. Literature will be reviewed to investigate current methods and equipment available for transporting live fish. Variables such as temperature control, air supply, and loading densities will be investigated. Collaboration with Zak Sutphin (D-8290) and Brent Bridges (TO-411) will ensure that fish densities and loadings are appropriate for the haul tank. Several concepts for a small fish haul truck will be developed with a recommended alternative. Materials and estimated costs for tank alternatives will be provided.

Coordination and Collaboration

The study will be coordinated between the Technical Service Center (TSC), Mid-Pacific Region, and TFCF staffs and the interagency Tracy Technical Advisory Team through regular updates and meetings.

Endangered Species Issues

This study will not require permitting.

Dissemination of Results (Deliverables and Outcomes)

This study will enable TSC researchers to complete a feasibility designs for a new small haul tank that will attach to the bed of the existing F-450 truck. Potential designs and recommendations for features to include in a small haul truck will be reported in a technical memorandum to the Tracy Fish Facility Improvement Program committee and TFCF personnel.